BTEC Level 3 IT
Unit 1 Information Technology Systems
Revisions sheets
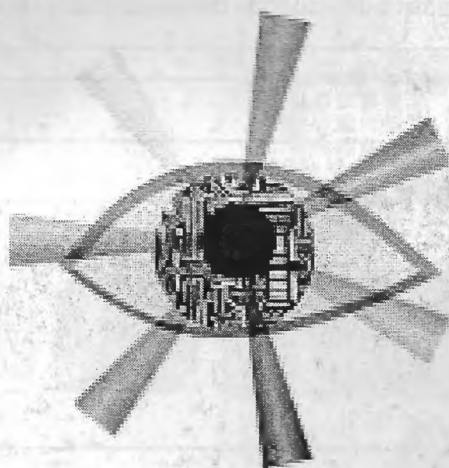
Information Technology

Name ....

Digital Devices 1

Task 1

Personal computers include devices like desktops and laptops. However, there are some fundamental differences between a desktop and laptop. List three features of a laptop that differ from a desktop.

1. _____

2. _____

3. _____

Task 2

Servers are not necessarily more powerful than desktop computers (though they usually are). However, there are ways in which server hardware is usually different to desktop hardware. Identify three of these differences below.

1. _____

2. _____

3. _____

Task 3

Mobile devices usually make use of system-on-a-chip. Identify three components of a computer that you can find on the microchip used in system-on-a-chip.

1. _____

2. _____

3. _____

Task 4

Different types of computer exist as they are specialised for different types of task. In the table below, give an example use for each of the different types of digital devices listed.

Device	Example
Personal Computer	
Server	
Mobile Devices	
Entertainment Systems	
Navigation Systems	

Digital Devices 2

Task 1

Multifunctional devices are capable of performing more than one specific function, often both input and output. Identify below three examples of multifunctional devices.

1. _____

2. _____

3. _____

Task 2

Data capture and collection devices are commonly used on an EPOS till system. On the drawing below, add annotations to describe how different data capture & collection devices would be used.

Task 3

Communication devices are used to move data between two other devices (e.g. two computers). Identify two example communication devices below.

1. _____   2. _____

Task 4

Different types of computer exist as they are specialised for different types of task. In the table below, give an example use for each of the different types of digital devices listed.

Device	Example
Multifunctional Devices	
Digital Cameras	
Data Capture & Collection Systems	
Communication Devices & Systems	

Uses of Digital Devices 1

Task 1

Education & training makes heavy use of digital devices. In the table below, identify three example devices used in your school education, and what they're used for.

Device	Use

Task 2

Our personal lives have been changed through the use of digital devices. In the table below, identify three example devices used in your personal lives, and what they're used for.

Device	Use

Task 3

Our social lives have also been changed through the use of digital devices. In the table below, identify three example devices used in your social lives, and what they're used for.

Device	Use

Uses of Digital Devices 2

Task 1

Retail is one of the areas that has really benefited from a wide range of digital devices. In the table below, identify three example devices used by shops, and what they're used for.

Device	Use

Task 2

Businesses rely on digital devices to complete their organisational tasks. In the table below, identify three example devices used in by businesses for organisational use, and what they're used for.

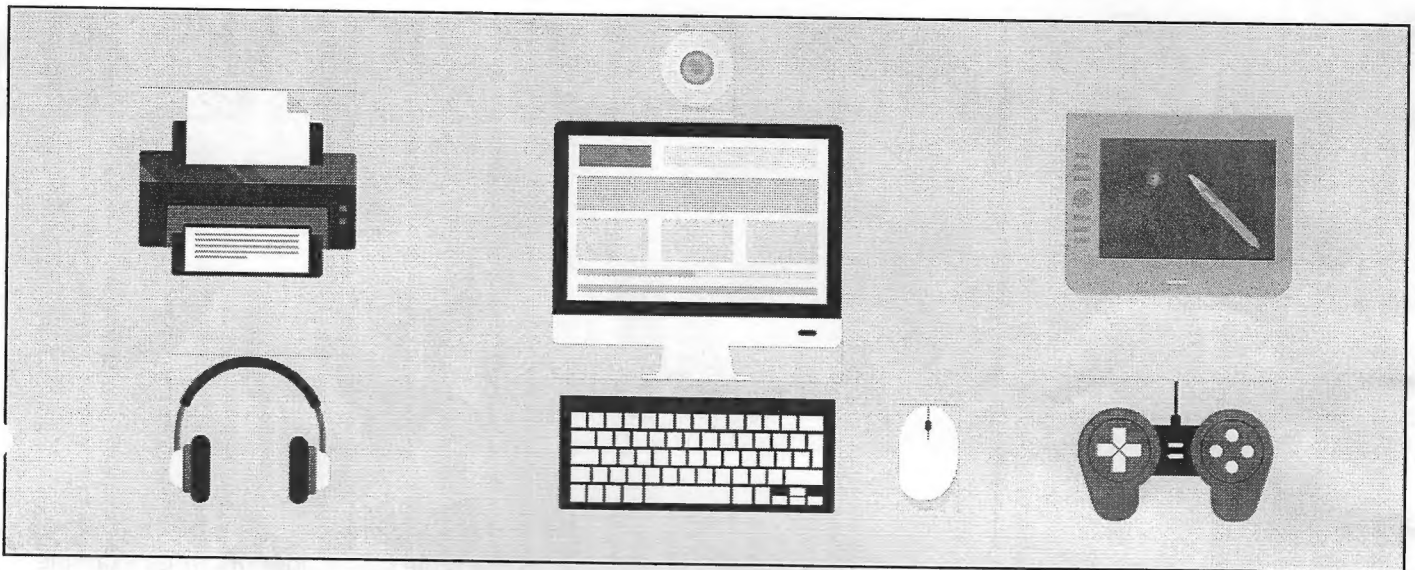| Device	Use

Task 3

The creative industry has perhaps changed the most through the use of digital devices. In the table below, identify three example devices used for creative tasks, and what they're used for.

Device	Use

Input & Output Devices

Task 1

We use a variety of different input and output devices in our daily lives. The drawing below identifies a range of these. Annotate the drawing to identify each of the different devices.

Task 2

Input devices are used to enter data and commands into a computer system and output devices are used to receive data from a computer system. Below is a list of example devices. Identify if they're input or output.

Device	Input	Output
Microphone		
Projector		
Sensor		
Plotter		
Actuator		

Task 3

Tatinda likes to take part in VoIP calls on her desktop computer. Identify 4 input and output devices she would require to perform this task?

1. _____

2. _____

3. _____

4. _____

Storage Devices

Task 1

When choosing an internal storage device to be our primary storage for a PC, we usually choose one of two options. These are hard disk drives and solid-state drives. They each have their own benefits and drawbacks. Compare these two storage devices below by identifying which is better for each feature.

Feature	Hard Disk Drive	Solid State Drive
Read/Write Speeds		
Storage Capacity		
Reliability		
Durability		
Portability		

Task 2

USB flash drives are popularly used as external storage. Optical disks, like CDs, used to be the most common external storage before USB. Identify three benefits of USB drives over CDs as external storage devices.

1. _____

2. _____

3. _____

Task 3

SD cards and optical disks are not as heavily used as storage devices like USB sticks, SSDs and HDDs. However, they're still popular for certain uses. In the area below identify a use for each of these devices and why they're popular for these uses.

SD cards _____

_____

Optical disks _____

_____

Task 4

Below are several statements about different utility programs. Identify which of these statements are true and which are false.

	True	False
1. Optical disk drives store data as magnetised and demagnetised areas.	☐	☐
2. Flash storage devices store data using semi-conductor chips that are set to either on or off.	☐	☐

Data Processing & Accessibility

Task 1

Manual and automatic data processing are used for different tasks. Identify one example of manual data processing and one example of automatic data processing.

Data Processing	Example
Manual	
Automatic	

Task 2

The reason automatic and manual data processing is used for different reasons is because they each have benefits and drawbacks. Identify two benefits of each of these methods of data processing below.

Manual data processing _____

Manual data processing _____

Automatic data processing _____

Automatic data processing _____

Task 3

Accessibility devices allow people with individual needs to access IT systems. There are a wide variety of devices that support different individual needs. Identify three accessibility devices that would help someone with a visual impairment to access an IT system.

1. _____

2. _____

3. _____

Task 4

As mentioned, different accessibility devices support different individual needs. Identify three accessibility devices that would help someone with a limited mobility to access an IT system.

1. _____

2. _____

3. _____

Types and Role of Operating System

Task 1

There are four main types of operating system. These are real-time, single-user - single-task, single-user - multi-tasking, and multi-user operating systems. These are used in specific circumstances and have their features that make them appropriate for these circumstances. Identify these in the table below.

Type	Use	Feature
Real-Time		
Single-User, Single-Task		
Single-User, Multi-Tasking		
Multi-User		

Task 2

Operating systems have a number of roles in ensuring your computer systems function. Two of the most important of these are the memory management and multi-tasking. Explain how the operating system performs these roles in a modern computer system.

Memory management _____

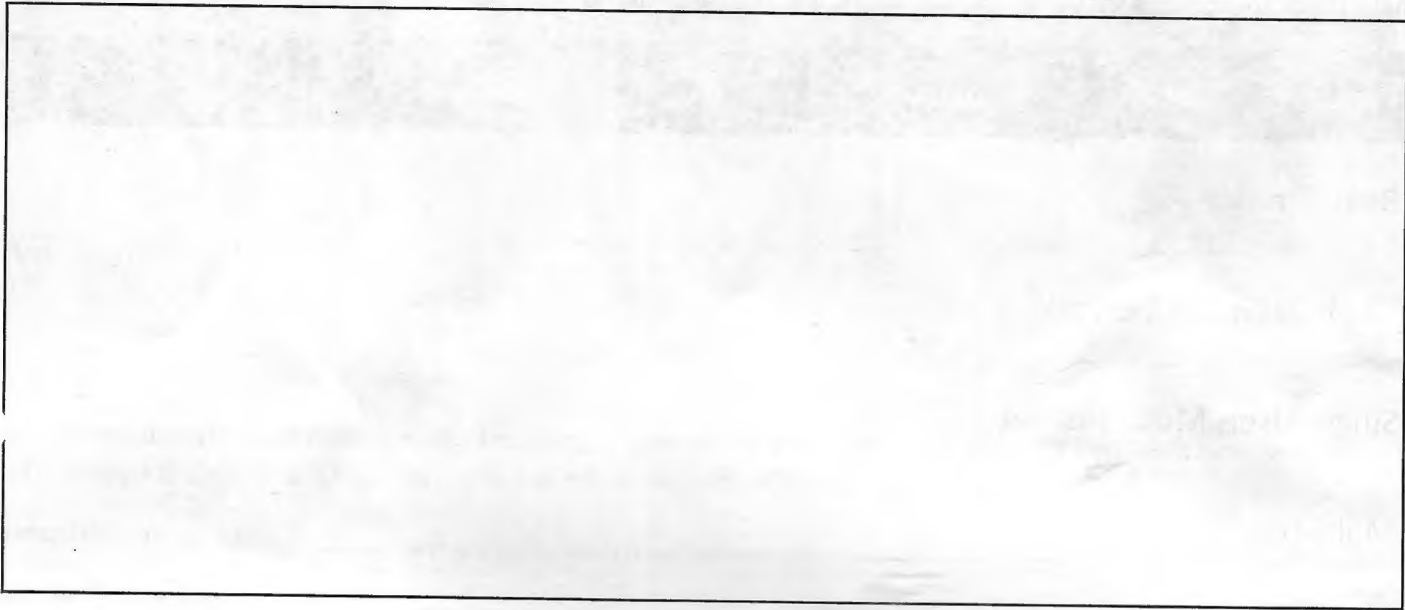_____

Multi-tasking _____

_____

Task 3

There are three additional roles that the operating system will perform to support the functioning of your computer systems. These are the networking, security & device drivers. Identify a feature of an operating system that supports each of these roles.

Role	Example
Networking	
Security	
Device Drivers	

Choice & Use of User Interfaces

Task 1

Graphical User Interfaces are sometimes known as a WIMP interface. Draw a GUI below and annotate it to identify the four features that make up the name WIMP.

Task 2

Three of the most common type of user interface are graphical user interfaces, command line interfaces and menu-based interfaces. They each are used in different situations and have their own benefits and drawbacks.

In the table below identify in what situation you would use each interface and a benefit of the interface.

Interface	Use	Benefit
Graphical User		
Command Line		
Menu Based		

Task 3

An adapted interface will alter its presentation based on the device it is being used on or based on the individual needs of users. Identify below three ways that an interface may adapt to a device or user needs.

1. _____

2. _____

3. _____

Performance of Operating Systems

Task 1

There are many factors that can affect the performance of an operating system. Three of these are the hardware, malware and virtual memory. For each of these, give an example of how they could reduce OS performance.

Interface	Example
Hardware	
Malware	
Virtual Memory	

Task 2

Disk defragmenters are a popular utility program to improve hard disk performance. However, sometimes running this program can take several hours. Identify two things that can affect how quickly the defragmenter can run.

1. _____

2. _____

Task 3

Anti-virus is another popular utility program. It helps to improve the security of your system to prevent viruses. Scanning the hard disk can take a very long time sometimes though. Identify two things that can affect how quickly the anti-virus can run.

1. _____

2. _____

Task 4

Below are several statements about different utility programs. Identify which of these statements are true and which are false.

	True	False
1. Disk defragmenters can improve the performance of both hard disk drives and solid state drives.	☐	☐
2. Having a very large hard disk drive can slow down the performance of your firewall.	☐	☐
3. The backup tool and software updater can both be affected by the speed of your internet connection.	☐	☐
4. Regularly running your disk/registry cleaner and disk defragmenter will reduce how long it takes for these tools to perform their task.	☐	☐

Application Software

Task 1

Productivity software is used in business to allow users to perform their work-based tasks more efficiently. Identify below 1 piece of productivity software, and two features of that software.

_____

1. _____

2. _____

Task 2

Graphic/Multimedia software is used to produce graphics and multimedia products on your computer system. Identify below 1 piece of graphic/multimedia software, and two features of that software.

_____

1. _____

2. _____

Task 3

Personal is software that we commonly use in the home to help in our general lives. Identify below 1 piece of personal software, and two features of that software.

_____

1. _____

2. _____

Task 4

Communication software is used to allow users to share information by passing it from one device to another. Identify below 1 piece of communication software, and two features of that software.

_____

1. _____

2. _____

Task 5

David is choosing some new video editing software he can use in the production of his YouTube videos. Discuss the factors he should consider when choosing this software.

_____

_____

_____

_____

_____

Image & Video File Types

KNOWITALL NINJA

Task 1

Images offer a variety of file types, with their own features and uses. In the table below identify the colour depth, type of compression & one use for each of the image file types listed.

File Type	Colour Depth	Compression	Use
BMP			
JPG			
GIF			
PNG			

Task 2

The image file types listed above are all examples of raster images. There are other file types used for a different kind of image called a vector image. Below, define the terms raster and vector images.

Raster images _____

Vector images _____

Task 3

Below are several statements about different video file types. Identify which of these statements are true and which are false.

	True	False
1. AVI have limited compression features and is more commonly used for high-quality uncompressed video.	☐	☐
2. AVI is the best file type for streaming as it's index is located at the end of the file container.	☐	☐
3. MOV and MP4 file types are so similar that you can convert video between them without re-encoding the video.	☐	☐
4. MKV is the best file type for watching video on mobile devices like tablets, due to its high compatibility with these devices.	☐	☐

Task 4

David has finished editing his video and is now ready to export it for uploading it to a video streaming service for sharing it with others. Identify two reasons why the MP4 file type would be a good choice for this.

1. _____

2. _____

Application File Types & Licences

Task 1

There are many different file type options for saving word processing documents. Three of these are listed below. Identify a benefit and drawback of each of these file types.

File Type	Benefit	Drawback
DOC		
DOCX		
RTF		

Task 2

Below are several statements about different video file types. Identify which of these statements are true and which are false.

	True	False
1. CSV file types are a common file type for spreadsheets as they store macros more efficiently.	☐	☐
2. The ACCDB file type allows users to use multi-value fields in Microsoft Access, which you couldn't with the MDB format.	☐	☐
3. The PDF file type is used with word processing, spreadsheet & presentation software to allow us to distribute documents in a high compatible format.	☐	☐

Task 3

Software licences give users permission to use a software application. There are two main categories of licence, open-source and proprietary. Define these two types of licence below.

Open source _____

Proprietary _____

Task 4

Open source and proprietary licence have different pros and cons that affect our decision as to what software application to use. In the table below, identify one benefit and one drawback for each licence type.

File Type	Benefit	Drawback
Open Source		
Proprietary		

Implications of Emerging Technologies KNOWITALL NINJA

Task 1

An emerging technology is one that is just starting to make an impact in the wider world. There are many different examples of these, and of course, they're changing all the time. These new technologies affect the performance of IT systems due to the requirements they have. Identify below the impact on performance of the follow technologies.

Technology	Impact on Performance
Virtual Reality	
Media Streaming	

Task 2

Smart speakers are a recent emerging technology that has made a big impact on individuals. Research this technology and explain how it has impacted positively and negatively on our personal lives.

_____

_____

_____

_____

_____

Task 3

3D printing is an emerging technology that has had a big impact on the manufacturing industry. Research this technology and explain how it has impacted positively and negatively on organisations.

_____

_____

_____

_____

_____

Task 4

Below are statements about different emerging technologies. Identify which of these statements are true and which are false.

	True	False
1. Emerging technologies benefit the work place as it reduces the amount of training needed to perform a job.	☐	☐
2. Emerging technologies benefit the work place as it reduces the number of human errors that occur in the workplace.	☐	☐

Factors Affecting Choice of IT System

Task 1

Amina is a graphic designer working for a small magazine publication. It is her job to use desktop publishing software and graphics editing software to design & create the layout for the magazine each month.

She uses a variety of peripheral devices to perform these tasks. This includes using multiple monitors at the same time, a graphics tablet, a scanner and a digital camera.

She works mostly from home but also works within the magazines head office.

Amina is considering purchasing a new IT system to help her perform her job. Below are listed a number of factors that Amina might consider when choosing the IT System. Discuss how each of these factors might affect her decision.

Factor	How It Affects Her Decision
User Experience	
User Needs	
Specification	
Compatibility	
Connectivity	
Cost	
Efficiency / Productivity	
Implementation	
Security	

Wired Methods of Connecting

Task 1

When connecting an external peripheral to a computer we would usually use a USB connection. This is because there are many benefits to using USB over other options. Identify three of the benefits of using USB.

1. _____

2. _____

3. _____

Task 2

Two popular methods of connecting monitors to a computer system are VGA and HDMI. Nowadays in modern computers we generally use HDMI, but there are still occasions where the older VGA is useful. Identify a different benefit and drawback of these options.

Connection	Benefit	Drawback
VGA		
HDMI		

Task 3

Below is a diagram that models a typical computer system. Label the connections in the diagram to identify the connections that would likely be used.
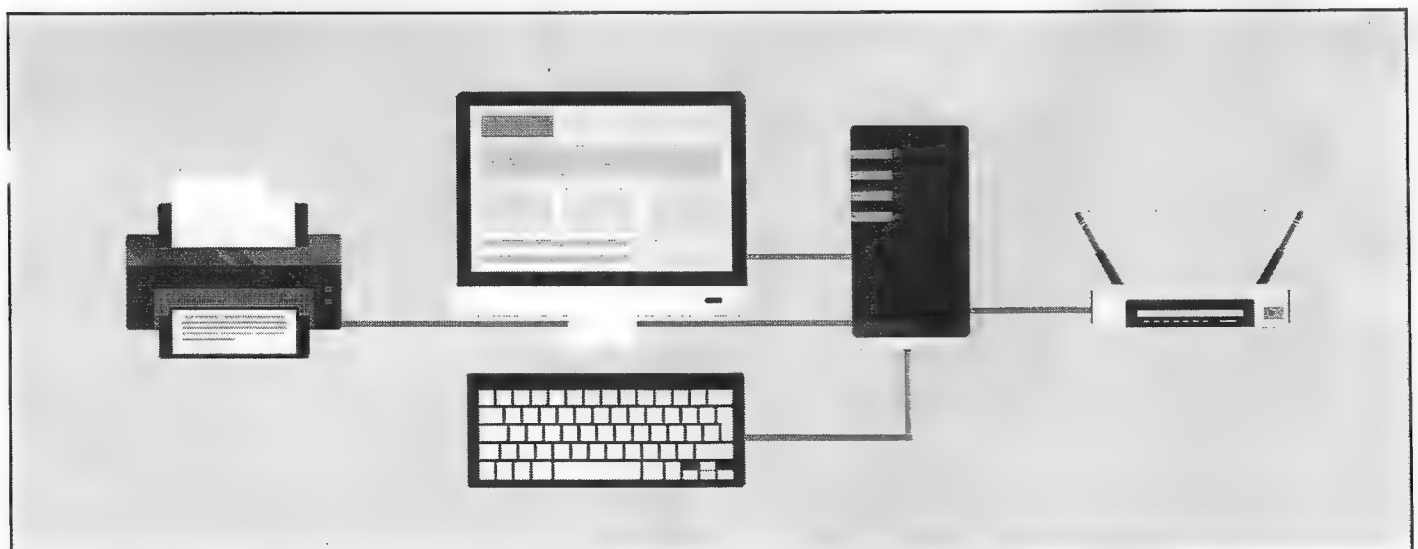
Task 4

Local Area Networks will often use an ethernet cable. However cabled WANs will usually use fibre optic cable. Identify two benefits of fibre optic cable that make it more suitable for WANs.

1. _____

2. _____

Wireless Methods of Connecting

KNOWITALL NINJA

Task 1

Infrared used to be the most common method of connecting wireless keyboards and mice to a computer. Now Bluetooth is more popular. Identify two benefits of using Bluetooth over infrared for connecting these devices.
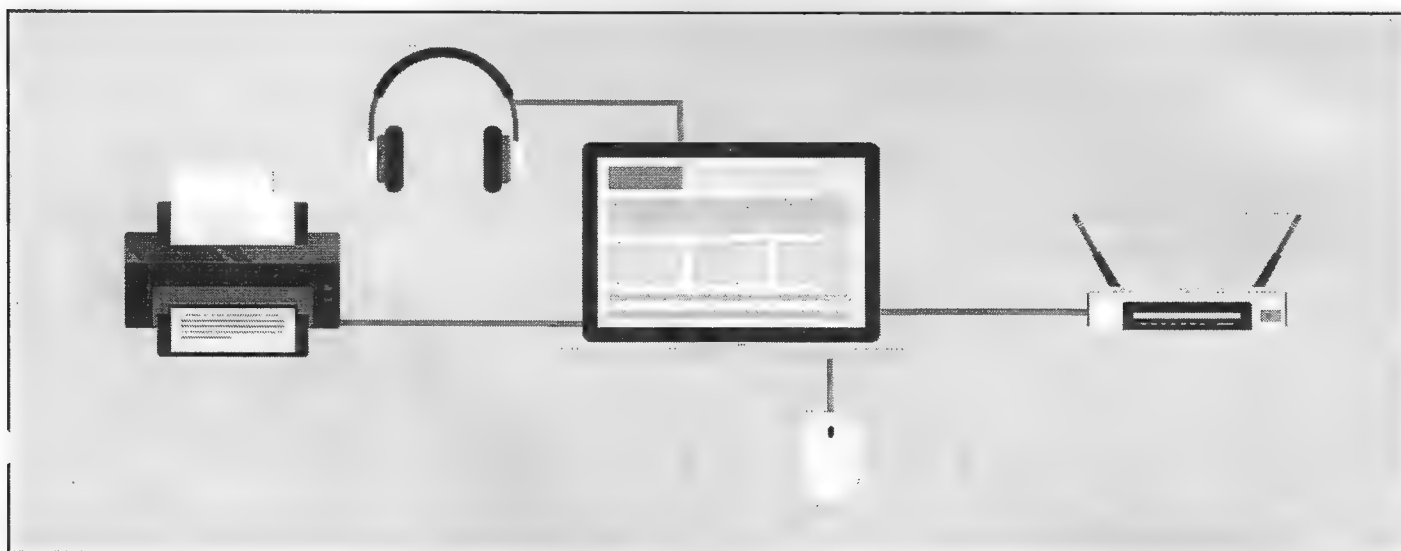
1. _____

2. _____

Task 2

There are two main wireless methods for connecting your smartphone to a laptop. There are WiFi and Bluetooth. Identify two benefits of using WiFi over Bluetooth for this.

1. _____

2. _____

Task 3

Below is a diagram that models a typical computer system. Label the connections in the diagram to identify the wireless connections that would likely be used.

Task 4

Below are several statements about wireless and wired connection methods. Identify which of these statements are true and which are false.

	True	False
1. Bluetooth is more secure than USB for connecting your smartphone to your laptop.	☐	☐
2. Ethernet cable connections provide faster data transfer speeds than WiFi.	☐	☐
3. There are no benefits to using mobile broadband over WiFi for connecting to the internet.	☐	☐
4. You can use WiFi to connect wirelessly to many home printers.	☐	☐

Types of Networks

Task 1

Different types of networks will often use different connections. For the three example networks below, identify which wired or wireless connection type may be used.

Connection Type	PAN	LAN	WAN
USB			
Ethernet Cable			
Fibre Optic			
Bluetooth			
WiFi			

Task 2

Personal Area Networks are often used to connect our smartphone to our laptop or tablet. Identify two reasons below why we might want to create a PAN between these devices.

1. _____

2. _____

Task 3

Businesses will often use a Local Area Network. Identify two reasons why a business uses this type of network.

1. _____   2. _____

Task 4

A medium sized business based in London has opened a second office in Glasgow. They need a private & secure method of transmitting files between the two offices. They're unsure whether they should use a private dedicated WAN or VPN. Discuss the relevant merits and drawbacks of these options.

_____

_____

_____

_____

_____

_____

_____

Factors Affecting Choice of Network

Task 1

Veronica has a small business of five employees. They each have their own workstation that is currently standalone. She would like to setup a network to allow these devices to communicate with each other so they can each have an internet connection, share access to the printer and to allow for files to be shared between the devices for better collaborative working.

Identify five factors that Veronica should consider when choosing the type of network that she should implement and discuss how these factors might affect her decision.

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

Task 2

Network performance can be affected by a many different issues. Below are listed a number of network components that can affect performance. Explain how each of these may affect the performance of your network.

Factor	How It Affects Her Decision
Server	
Connection	
Firewall	
Router	

Data Transmission Protocols

Task 1

Complete the diagram below by labelling the different email protocols involved in sending and receiving emails.
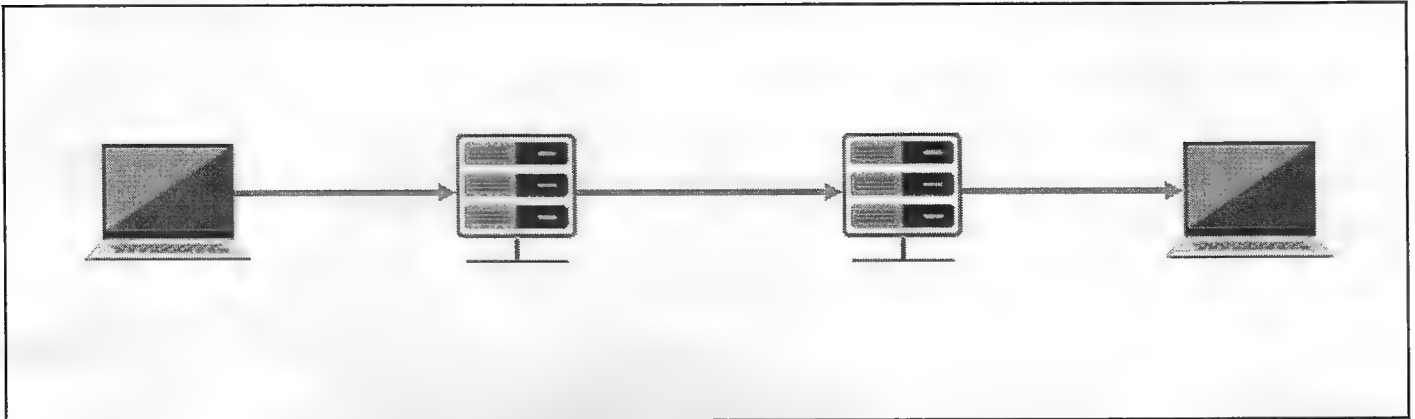
Task 2

The three main protocols used in voice & video calls over the internet are the SIP, RTP & RTCP. Match the explanations below to their protocols.

Establishes the connection between sender & receiver.	**RTP**
Transmits the data packets along the connection.	**SIP**
Sends control packets that provide feedback on the quality of the data delivery.	**RTCP**

Task 3

Below are several statements about different data & user protection legislation. Identify which of these statements are true and which are false.

	True	False
1. HTTP is the protocol used for transmitting web pages and their additional files to your browser over the internet.	☐	☐
2. The FTP creates two connections when transmitting files, a control connection & a data connection.	☐	☐
3. HTTP is more commonly used than FTP when uploading web page files to a web server.	☐	☐

Task 4

Performing a purchase online using a credit/debit card usually uses two main protocols for security purposes. What are they?

1. _____   2. _____

Data Transmission Security Issues

Task 1

Below are several statements about different data transmission security issues. Identify which of these statements are true and which are false.

	True	False
1. Mobile broadband networks are particularly vulnerable to packet sniffing.	☐	☐
2. Packet sniffers work by allowing a computer to look at data packets on a a network, even when not addressed to them.	☐	☐
3. IP spoofing is a particularly common method of performing denial of service attacks.	☐	☐

Task 2

Packet sniffing is a big concern of users that are transmitting data using public WiFi connections. Why is this?

_____

_____

_____

Task 3

Hardware and software firewalls both have important roles in protecting a network and IT system. Identify two benefits of a software firewall over a hardware one.

1. _____

2. _____

Task 4

Encryption is commonly used in internet applications to help keep data secure during transmission. Specifically, asymmetric (otherwise known as public key encryption) is used. Complete the diagram below showing how data is encrypted using this form of encryption.

Bandwidth, Latency & Compression

Task 1

Bandwidth and latency are two different terms related to the speed of a network. Describe each of these terms below.

Bandwidth is _____

_____

Latency is _____

_____

Task 2

The bandwidth or latency of a connection can be more important for different uses of the network. In some cases, one is more important than the other, in some they are both equally important. Explain in the table below the importance of bandwidth and latency for each of the examples.

Scenario	Bandwidth	Latency
Online Gaming		
Online Streaming		
Browsing the Web		
VoIP Calls		

Task 3

Compression is very important when transmitting files over a network, as it will help to reduce the size of the files, allow the transmission to be completed faster. There are two types of compression we use though, lossy & lossless. Identify one benefit and one drawback of lossy compression.
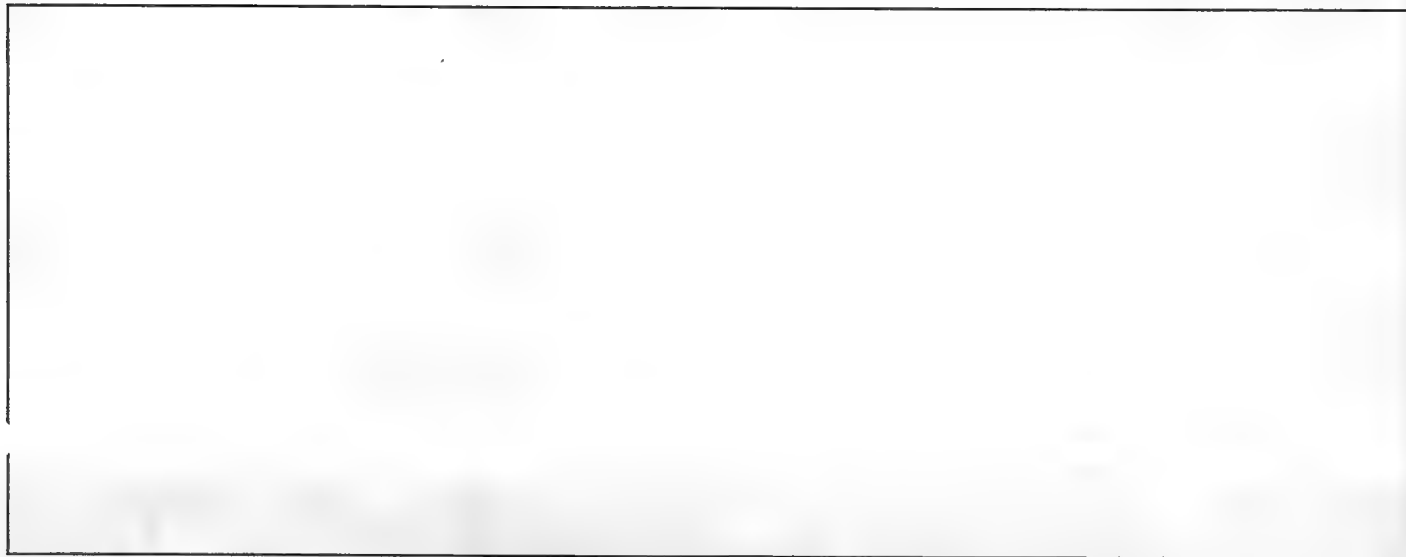
+ _____

− _____

Task 4

Below are several statements about lossless compression. Identify which of these statements are true and which are false.

	True	False
1. Compressed video and audio files usually use lossless compression.	☐	☐
2. PNG is an example of a lossless compressed image file type.	☐	☐
3. Archive file formats, such as ZIP files, use lossless compression.	☐	☐

Using Online Systems

Task 1

Businesses often use cloud computing and storage, rather than local computing and storage. Draw a diagram below that shows how cloud computing/storage works.

Task 2

Cloud computing & storage has many benefits to a business itself, which is why so many are using it nowadays. Identify below 3 benefits to the business of using cloud computing & storage.

1. _____

2. _____

3. _____

Task 3

While cloud computing and storage undoubtedly offers many benefits, there are drawbacks too. Identify below 2 drawbacks to the business of using cloud computing & storage.

1. _____

2. _____

Task 4

It isn't just businesses that benefit from the use of cloud storage and computing. Individuals, such as the business employees, will benefit from its use. Identify below 3 benefits to employees of using cloud computing & storage.

1. _____

2. _____

3. _____

Remote Working

Task 1

Working remotely, such as from home, has become more prevalent with the growth of technology. Two technologies that have been key in allowing this are Virtual Private Networks and Remote Desktop software. Below, identify one benefit and one drawback of using VPNs.

+ _____

− _____

Task 2

As mentioned, an important technology for remote working is Remote Desktop Technologies. Explain what remote desktop technologies are and identify below one benefit and one drawback of this tool.

_____

_____

+ _____

− _____

Task 3

Haleema runs a small financial investment business. She allows for flexible working amongst her team of employees, including allowing for them to work from home on certain days. However, there are a lot of confidential files that she would like her staff to access from home.

She is considering using remote desktop technologies for this. In the table below, consider how the factors listed could affect her decision on whether to use this tool.

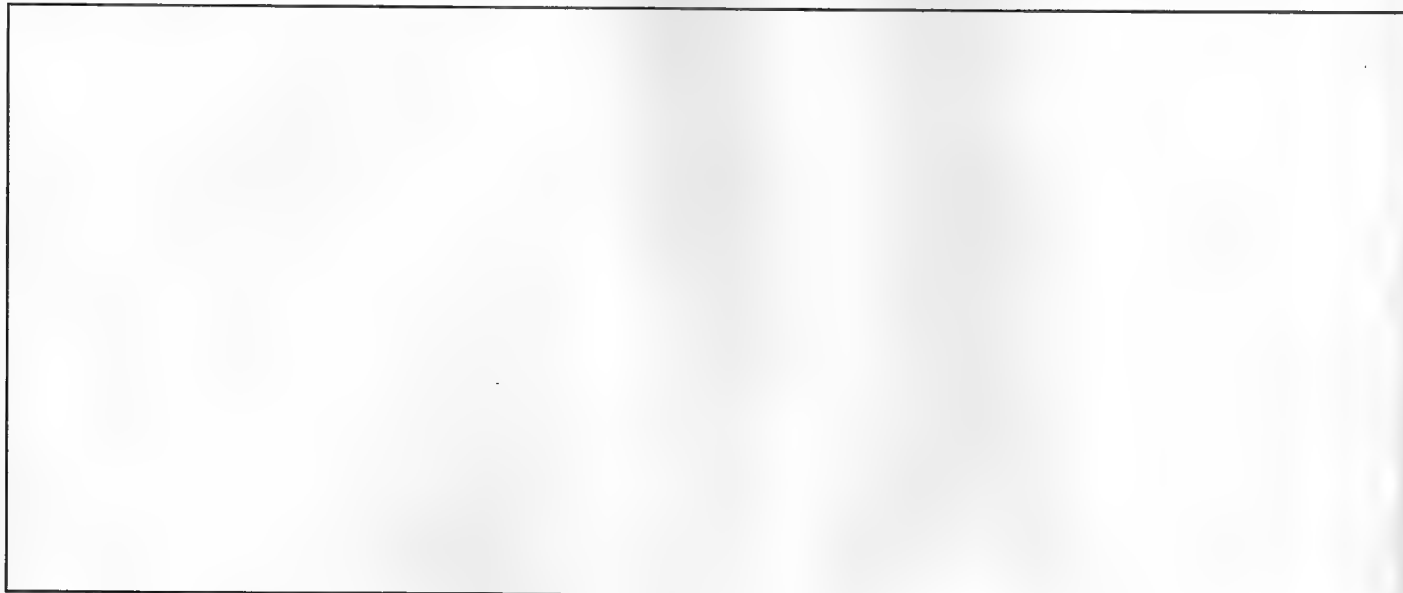| Factor	Explanation
Security	
Cost	
Ease of Use	
Features	
Connectivity	

Interacting with Online Communities

Task 1

Different types of online communities can be of greater use in different scenarios. In the table below, identify a situation where each type of online community will be of greatest use.

Online Community	Example
Social Media	
Blogs	
Wikis	
Chatrooms	
Instant Messaging	
Podcasts	
Forums	

Task 2

Chatrooms and instant messaging are both methods of taking part in a written conversation with an individual or group of people. However, each work slightly differently. In the space provided below, draw a diagram of how an instant messaging service, like WhatsApp, works.

Implications of Online Communities

Task 1

A small fashion retail store is looking into creating an online community using the social networking website Facebook.

The goal is to be able to share new product releases and upcoming sales or events with customers. They also hope to gain some positive reviews with customers and to improve communication with any complaints.

Analyse the implications of implementing this online community to both the customers and the organisation itself.

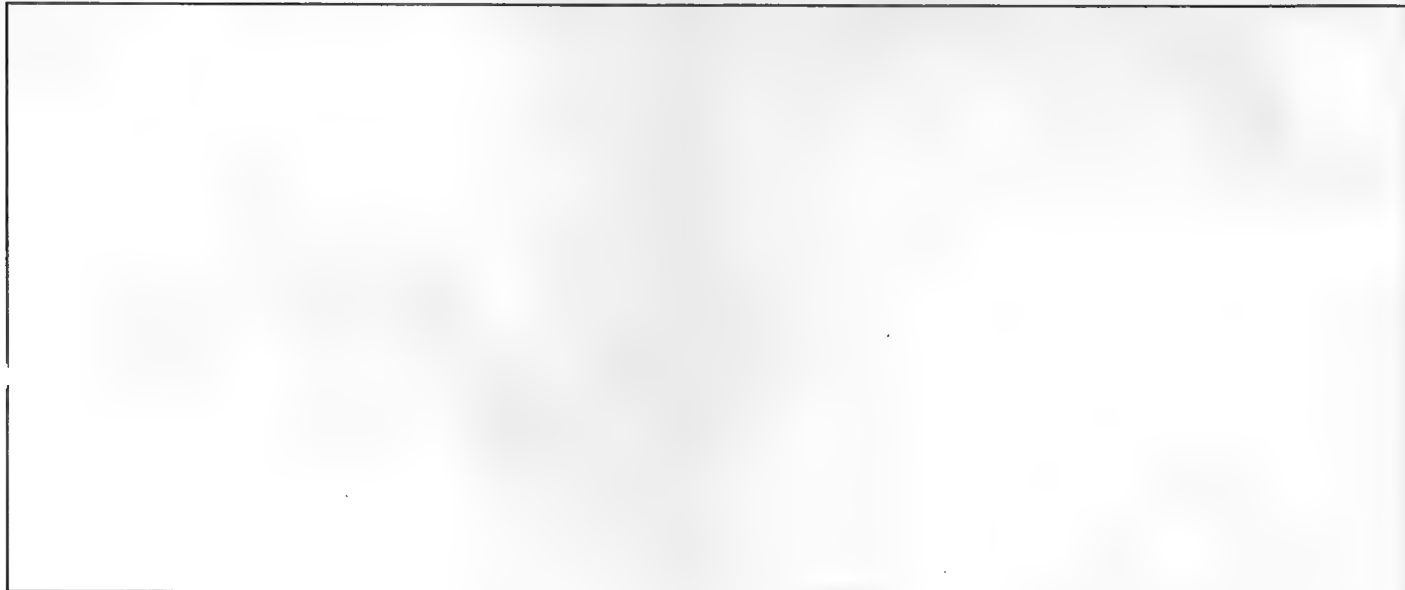| Factor	Customer Implications	Organisation Implications
User Experience		
Customer Needs		
Cost		
Privacy / Security		

Implication of Threats

Task 1

Malicious software, or malware, come in a variety of different types. These different types of malware can spread and act in different ways and can have a different impact on your computer system. Identify these below.

Term	Explanation	Impact
Virus		
Worm		
Trojan		
Spyware		

Task 2

Phishing attacks try and take advantage of individuals to try and steal private and personal information. Draw a flow diagram below to explain how a phishing attack works.

Task 3

An organisation has had their network hacked into and the hacker has gained access to all of the company's files, including private and confidential information on employees, suppliers & customers.

Identify and explain 3 different implications this may have for the organisation.

1. _____

2. _____

3. _____

Protecting Data Techniques

Task 1

Different techniques help to protect us from different threats. Not just the threats we looked at in the previous lesson, but many others too. For each of the techniques below, identify the threats they help protect us against.

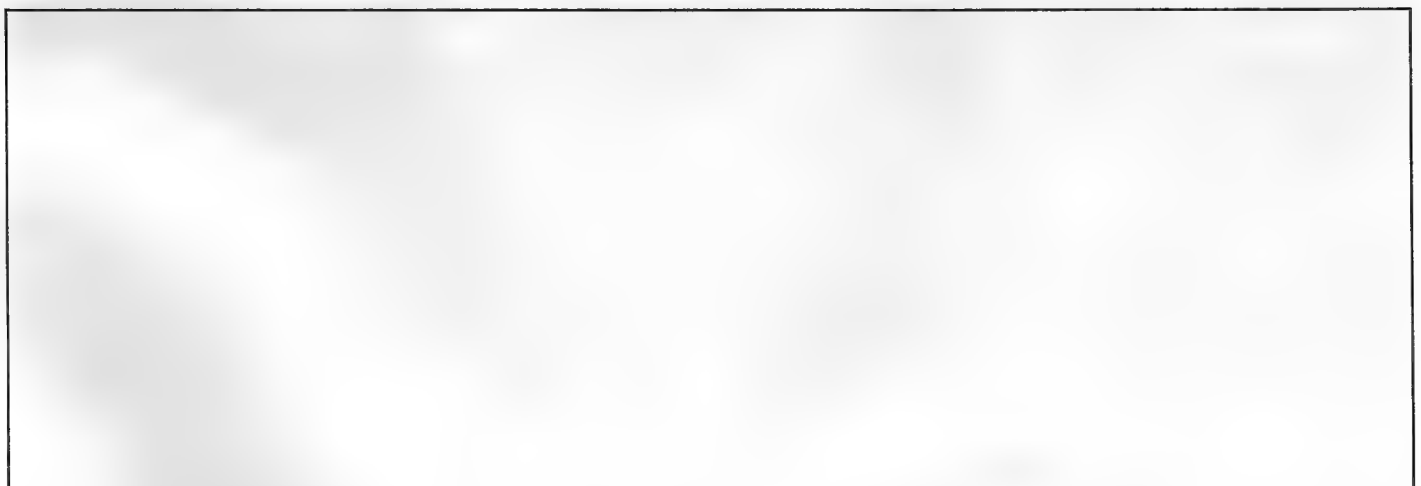| Technique	Threats
File Permissions	
Access Levels	
Backup & Recovery Procedures	
Passwords	
Physical Access Controls	
Digital Certificates	
Protocols	

Task 2

Physical access controls help to prevent unauthorised users from gaining access to our computer hardware. Identify 2 benefits of using a biometric access control over keypad, smartcard or lock & key access control.

1. _____

2. _____

Task 3

The public key of an organisation can be found on their digital certificate. This is used as part of the HTTPS protocol to encrypt data that is being transmitted over the internet. Draw a diagram below that shows the process of public key encryption when transmitting data over the internet.

Protecting Data Tools

Task 1

Anti-virus software uses both signature detection & heuristic detection. What is the benefit of heuristic detection over signature detection?

_____

_____

Task 2

Firewalls can be both hardware & software. These each have their own role in protecting data and usually a business will make use of both. Label the diagram below to identify where a hardware & software firewall would fit into a network.

Router   Switch   Server

Internet

Client
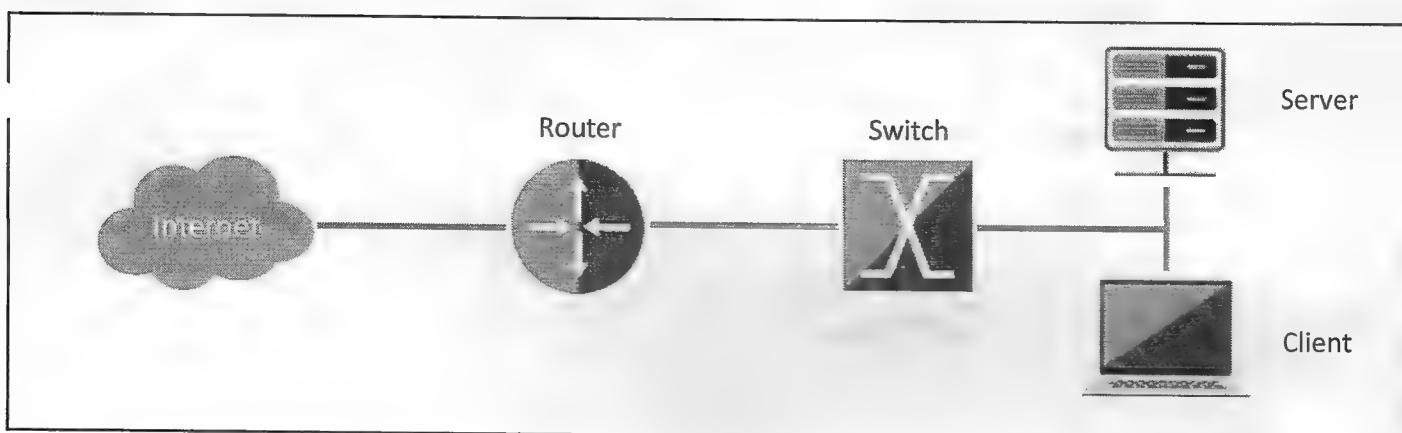
Task 3

Firewalls are not just used to prevent unauthorised access by hackers. The also help to protect us against malware and even phishing attempts. Identify and explain two ways firewalls can protect us from these two threats.

1. _____

2. _____

Task 4

There are benefits & drawbacks to using different tools for protecting our data. Identify a benefit and a drawback for each of these tools below.

Technique	Benefit	Drawback
Anti-Virus		
Firewall		
Encryption		

Features of Online Services

Task 1

It has become extremely common to make bookings online, such as booking cinema tickets, or holidays. Draw a flow diagram below of the process of booking cinema tickets in person and another diagram for booking them online. What are the obvious benefits and drawbacks of booking online based on this diagram?

Task 2

Businesses use many different types of online services. Describe why businesses use these 3 different types of online services.

Retail websites _____

_____

E-Learning websites _____

_____

Cloud computing _____

_____

Task 3

There are many different types of online entertainment services. Complete the table below to identify a benefit & drawback of each of these services.

Term	Benefit	Drawback
Video Streaming Sites		
Music Streaming Apps		
Online Gaming		

Uses of Online Services

Task 1

Transactional data is important to a business, whether online or offline, to help it analyse its performance and to target opportunities. In the table below identify whether the data listed is transactional or non-transactional.

Data	Transactional	Non-Transactional
Invoices		
Product Information		
Shipping Documents		
Passport Applications		
Customer Details		

Task 2

Social networking websites, like Facebook, make heavy use of targeted marketing. Identify 3 different ways that sites like Facebook target their marketing at its users.

1. _____

2. _____

3. _____

Task 3

Transactional data, targeted marketing & collaborative working are all uses of online services. Identify a benefit and a drawback of each of these uses.

Use	Benefit	Drawback
Transactional Data		
Targeted Marketing		
Collaborative Working		

Task 4

Collaborative working is easier thanks to online services. Identify two tools that help support collaborative working.

1. _____   2. _____

Features of IT Systems 1

Task 1

Stock control is now completed using IT systems, such as databases running on servers to monitor stock levels and EPOS till systems to track sales. Describe one benefit and one drawback below of using IT systems for this task.

1. _____

_____

2. _____

_____

Task 2

IT systems help to support the implementation of JIT (Just In Time) stock control. Draw a flow diagram below showing the JIT stock control process.

Task 3

People commonly use smartwatches to log and analyse data on their personal fitness. Describe below the data that might be logged, what analysis might be performed on it and the benefit this would have to an individual.

_____

_____

_____

Task 4

General office tasks make heavy use of IT systems. They have changed the role of employees, particularly those in an admin role. Describe 2 ways that a business manager might use IT systems to complete his work.

1. _____

_____

2. _____

_____

Features of IT Systems 2

Task 1

Computer-Aided Design software is used heavily in creative tasks, such as designing cars for manufacturing, producing building blueprints and producing designs for gardens. There are many features provided by CAD software to help with producing designs. Complete the table with description for each of the features identified below.

Feature	Description
Zoom/Rotate	
Asset Library	
Stress Analysis	
Rendering	
Simulation	

Task 2

IT systems are used for security in the workplace and the home. Annotate on the drawing below to identify where IT systems could be used to improve the security of this office.

Task 3

Advertising companies will now usually produce all their adverts using IT systems. This might be video editing software to edit advert video footage, or desktop publishing software to produce a flyer. Describe two benefits to advertising companies of using IT systems for these tasks.

1. _____

_____

2. _____

_____

Impact of IT Systems

Task 1

A large insurance organisation has hundreds of employees that each have a staff laptop. These laptops are used to perform general office tasks, such as word processing and spreadsheets. They're also used for internet access so that staff can work collaboratively on files, take part in video conferences and send emails.

These laptops have become quite outdated and this business needed to replace them. Instead of replacing them with laptops, they instead have replaced them with tablet devices.

What is the impact on the organisation of using tablets to replace the laptops?

Factor	Impact
User Experience	
Employee / Customer Needs	
Cost	
Implementation	
Replacement / Integration	
Productivity	
Working Practices	
Staff Training	
User Support	
Security	

Data Sources

Task 1

Primary and secondary data sources both have their own benefits. In the table below, identify three benefits of each of these types of data sources.

Primary	Secondary

Task 2

The reliability of data we gather is extremely important. When researching information online, what techniques can you use to ensure data reliability? Identify three methods below.

1. _____
2. _____
3. _____

Task 3

Three methods of collecting data are listed below. Each of these have their own benefits and drawbacks that make them useful in specific situations. Identify one benefit and drawback for each of these methods.

Method	Benefit	Drawback
Questionnaire		
Focus Group		
Interview		

Task 4

When using an online questionnaire to gather information, what techniques can help to ensure the data collected is reliable? Identify three methods below.

1. _____
2. _____
3. _____

Data Collection User Interfaces

Task 1

A website contains a form to login to their user profile. The login form contains inputs for the username & password as well as a captcha input for preventing brute force hacking attacks. Draw an example login form below, annotating the features you've included to improve ease of use and accessibility.

Task 2

It's important that a Data Collection User Interface uses features to reduce the likelihood of errors occurring. There are a number of ways to ensure this. List two methods below for improving the error reduction of a user interface.

1. _____

2. _____

Task 3

Other than the ease of use, accessibility and error reduction, there are a number of other factors that should be considered when designing a data collection user interface. These are listed below. Give an example of how you can implement each of these.

Factor	Example
Intuitiveness	
Functionality	
Performance	
Compatibility	

Moral & Ethical Factors 1

Task 1

The growth of IT systems has raised many moral & ethical concerns. These concerns can have many short and long-term impacts on individuals and businesses. Complete the table identifying one short and one long term impact for each of the moral & ethical factors identified below.

Ethical Issue	Short-Term	Long Term
Environmental Harm		
Unequal Access		
Online Behaviour		
Globalisation		

Task 2

The internet has been a great tool for offering people a platform to share their views and opinion. Identify three negatives that has arisen due to the freedom people have to publicly share their views online.

1. _____

2. _____

3. _____

Task 3

IT systems and the internet in the workplace has caused a lot of issues over their acceptable use. The inappropriate use of these systems has many negative impacts on businesses and so many businesses implement acceptable use policies. Discuss the pros and cons of implementing such an acceptable use policy.

_____

_____

_____

_____

_____

_____

_____

Moral & Ethical Factors 2

Task 1

Businesses have an ethical obligation to ensure that employees are protected from health and safety issues that can arise from the extended use of IT systems. Annotate the diagram below with examples of good health & safety practice when using an IT system.

Task 2

Businesses have many other ethical responsibilities to their customers and employees. Some of these are listed in the table below. Identify an impact of each of these ethical responsibilities on individuals.

Ethical Issue	Impact on Individuals
Copyright	
Computer Misuse	
Protection of Data	
Privacy	
Accessibility	

Data & User Protection Legislation

Task 1

The computer misuse act has four offences that cover a variety of crimes. In the table below, identify one example crime for each of the CMA's offences.

Offence	Example
Offence 1	
Offence 2	
Offence 3	
Offence 3a	

Task 2

The Computer Misuse Act was extended by the Police and Justice Act 2006 (Computer Misuse). Identify below three different changes it made to the CMA?

1. _____

2. _____

3. _____

Task 3

Below are several statements about different data & user protection legislation. Identify which of these statements are true and which are false.

	True	False
1. Under the Data Protection Act, the maximum punishment you can receive is a £100,000 fine.	☐	☐
2. Before the Copyright (Computer Programs) Regulations 1992, the copyright only lasted 25 years on software.	☐	☐
3. Before the Consumer Rights Act there was no protection for consumers of digital content, such as e-books.	☐	☐

Task 4

The Health & Safety (Display Screen Equipment) Regulations extended the Health & Safety at Work Act to ensure users of display screen equipment are not harmed due to their use. Employers have a number of responsibilities to their employees under this law. Identify three of these responsibilities below.

1. _____

2. _____

3. _____

Accessibility Legislation & Guidelines

Task 1

The Disability Discrimination Act (1995) protected individuals from discrimination based on their disability. It covered three main areas of discrimination. What were these?

1. _____

2. _____

3. _____

Task 2

The Equality Act 2010 made a number of changes to disability discrimination law. It specifically added three new forms of disability discrimination. Complete the table below by defining each of these types of discrimination.

Type of Discrimination	Explanation
Perceived Discrimination	
Associative Discrimination	
Indirect Discrimination	

Task 3

The Web Content Accessibility Guidelines define 12 guidelines split into four principles. These principles are listed in the table below. For each of these, identify at least one guideline and a technique for meeting this guideline.

Principle	Guideline	Technique
Perceivable		
Operable		
Understandable		
Robust		

Task 4

The Open Accessibility Framework defines six steps to ensure the accessibility of an IT system. Identify two of these steps below.

1. _____   2. _____